

**THESIS**

**THE LEVEL OF PALMITIC AND PALMITOLEIC ACID IN  
THE MILK OF COW WHICH CONSUME COMPLETE FEED**



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## **THE LEVEL OF PALMITIC AND PALMITOLEIC ACID IN THE MILK OF COW WHICH CONSUME COMPLETE FEED**

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### **ABSTRACT**

The objective of this research was to examine the effect of feeding using complete feed added with various formula toward the level of milk's palmitic acid and palmitoleic acid on Friesian Holstein cross cow. Subject which used in this research was ten female Friesian Holstein cross cows aged between four until seven years old with two until six lactation periods. The substances were control feed P0 and complete feed with formula P1, P2, P3, P4. The research was complete randomized design with five treatments and two replications which was different. The data were analyzed with analysis of variant, and difference mean between the treatments was tested by Duncan's multiple range tests. The software that was used to analyze the data was windows Statistical Program of Social Science 16 (SPSS 16). The result of the research showed that P3 complete feed containing the lowest crude fiber among the treatment could increase the level of palmitic and palmitoleic acids in the cow milk.

**Keyword :** *palmitic acid, palmitoleic acid, complete feed, milk.*

## THESIS SUMMARY

**Heri Irawan.** The Level of Palmitic and Palmitoleic Acid in The Milk of Cow which Consume Complete Feed was under the advisory of Tri Nurhajati, drh., MS. as supervisor, M.Yunus, drh., M.Kes., Ph.D. as co supervisor, and Prof. Hj. Romziah Sidik, drh., Ph.D. as the main researcher of this research project.

The objective of this research was to examine the effect of feeding using complete feed added with various formulas toward the level of milk's palmitic acid and palmitoleic acid.

The experimental animals in this research were 10 female cross dairy cows of Frisian Holstein. They were 4 to 7 years old and on the second to sixth month of lactation with the average production of 10 liter/ head/ day of each cow. In addition, these were divided randomly into 5 treatments, with twice replications of each treatment.

During the experiment, 15 kg of complete feed was given to the cow each day. Samples of the feed were obtained from the complete feed, while samples of the milk were obtained during the feed treatment phase in a week. Samples of the milk were collected in the morning and in the afternoon. The analysis of palmitic acid and palmitoleic acid was conducted using HPLC (High Performance Liquid Chromatography) method.

This research used Completely Randomized Design (CRD) with 4 different treatments, which of each was repeated twice time, and 1 control. The obtained data was analyzed using Analysis of Variant method and for the average

difference among the treatments was examined by Duncan's multiple range test. Data analysis used Windows Statistical Program for Social Science (SPSS) software version 16.

The result showed that there was significant difference of the palmitic acid and palmitoleic acid level in the dairy cow's milk ( $p < 0.05$ ) due to different treatment. The level of palmitic acid among different treatments in this research was on the different level; that was 35.76%<sup>ab</sup> (P0), 17.07%<sup>ab</sup> (P1), 6.31%<sup>b</sup> (P2), 43.48%<sup>a</sup> (P3), and 12.61%<sup>b</sup> (P4). Likewise, the level of palmitoleic acid among different treatments in this research was on the different level; that was 1.76%<sup>ab</sup> (P0), 0.59%<sup>ab</sup> (P1), 0.34%<sup>b</sup> (P2), 2.57%<sup>a</sup> (P3), and 0.76%<sup>ab</sup> (P4). Complete Feed P3 was the best complete feed recommended as an alternative feed for dairy cows.